BORDER REV: DATE: June 1, 2004

PROJECT DESCRIPTION

I. GENERAL

This project involves the installation of a mast arm Traffic Control Signal with street lighting at the intersection of MD 27 (Ridge Rd) and Oak Drive in Montgomery County. MD 27 (Ridge Rd) is assumed to run in a north-south direction. Signing and Marking plans are also included in this project. The Signal Contractor shall be responsible for the signing. The District-3 Maintenance shop will be responsible for the pavement markings.

II. INTERSECTION OPERATION

1. The intersection is to operate in a NEMA four-phase, semi-actuated mode, with the MD 27 (Ridge Rd) approaches running concurrently. An Exclusive/Permissive left turn phase shall be provided for the northbound approach of MD 27 (Ridge Rd). A Countdown pedestrian phase with audible pushbutton actuation shall be provided across the north leg of MD 27 (Ridge Rd). The Oak Drive approach shall run in its own phase.
2. A queuing loop shall be installed in the left turn lane of Valley Park Drive approximately 500' south of Oak Drive. When activated, the signal at MD 27 and Oak Drive shall go to Phase 4 in an effort to create gaps for the left turning vehicles out of Valley Park Drive.
3. A full-traffic-actuated, eight-phase controller with one (1) four channel, rack mount loop detector amplifiers housed in a NEMA size "6" base-mounted cabinet shall be installed at this intersection.
4. Montgomery County Signal Shop shall install APS control unit into controller cabinet. The Contractor shall deliver the Control Unit and audible pushbuttons to the Montgomery County Signal Shop 3-4 weeks prior to expected signal turn on date for testing and programming.

III. SPECIAL NOTES

1. The Contractor shall be responsible for terminating all signal cables, to the appropriate terminals and shall properly label each cable.
2. All controller cabinet wiring will be preformed by Montgomery County Forces. Contact Mr. Kamal Humud at (240) 777-8761 seventy-two hours in advance of intended work.
3. All underground and overhead utilities shown on these plans are schematic only and may not be complete. The Contractor shall be responsible for notifying Miss Utility prior to construction so that all utilities may be located in the field. If the Contractor perceives that a conflict between the utilities and the traffic signal will occur, the Contractor shall notify the Project Engineer immediately so that the conflict may be resolved.
4. APS will function as follows:
   a. When pedestrian locates and presses pushbutton for an extended time, the at the pushbutton unit will be " Wait to cross Ridge Road at Oak Drive.
   b. When WALK phase begins, the message will be a rapid tick which will last for the duration of the WALK phase.
5. The contractor must contact Mr. Kamal Hamud of Montgomery County at (240)777-8761 for the purpose of having the telephone drop installed.

The contact persons for District #3 (Montgomery County) are as follows:

Mr. Jeff Wentz
Assistant District Engineer - Traffic
Phone: (301) 513-7318

Mr. Wayne Mowdy
Assistant District Engineer - Maintenance
Phone: (301) 513-7304

Mr. Augie Rebish
District Engineer - Utility
Phone: (301) 513-7350

Mr. Kamal Hamud
Montgomery County
Phone: (240) 777-8761

Mr. Richard L. Daff, Sr.
Chief, Traffic Operations Division
Phone: (410) 787-7630

Mr. Ed Rodenhizer
Signal Shop
410-787-7652

Mr. Sonny Bailey
Sign Shop
410-787-7670

The power company representative is:

Mr. Bruce Wibberley
Allegheny Power
421 East Patrick Street
P.O. Box 488
Frederick, MD 21705
301-694-4485

EQUIPMENT LIST

A. EQUIPMENT TO BE SUPPLIED BY S.H.A.

ITEM NO.	DESCRIPTION	QUANTITY
9042	Controller ASC II with telemetry	1 EA
9044	Controller cabinet, size '6'	1 EA
9570	Sheet aluminum signs to consist of: (ground mount)	58 SF
	OM-1(1) 'OBJECT MARKER' sign, (18' x 18') ground mounted with hardware.	1 EA
	R1-2 'YIELD' sign, (36'x36'x36') ground mounted with hardware.	1 EA
	S1-1 'SCHOOL' sign, (36' x 36') ground mounted.	2 EA
	M6-2 'arrow (symbolic)' right diagonal sign, (15' x 21') ground mounted.	1 EA
	M6-2 'arrow (symbolic)' right diagonal sign, (15' x 21') ground mounted.	1 EA
	W3-3 NEW 'SIGNAL AHEAD' sign, (36' x 36') ground mounted with hardware.	3 EA
9571	Sheet aluminum signs to consist of: (mast arm or pole mount)	30 SF
	D3-2 'Oak DR < 25600/ Oak DR 25600>' sign, (variable x 16')	2 EA
	D3-2/M95-1 'Ridge Rd 25500> NORTH (arrow)/ MD 27 / SOUTH (arrow)' (78' x 40') mast arm mount.	1 EA
	Pedestrian education R10-3(1) mod sign. (Note: Sign to read 'PUSHBUTTON TO CROSS RIDGE RD') pole mount.	2 EA

EQUIPMENT LIST (CONT.)

B. EQUIPMENT TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR

ITEM NO.	DESCRIPTION	QUANTITY	
1001	Maintenance of traffic per assignment.	3	EA
2001	Class 2 Excavation.	5	C.Y.
2002	Test Pit Excavation	6	C.Y.
5004	12" heat applied white permanent preformed thermoplastic pavement marking.	375	L.F.
5005	24" heat applied white permanent preformed thermoplastic pavement marking.	60	L.F.
8001	12" LED signal head section.	31	EA
8002	2 wire Central Control unit	1	EA
8007	Any size lighting arm on signal pole with 250 watt HPS lamp & luminaire.	2	EA
8008	Audible/tactile pedestrian pushbutton station & signs.	2	EA
8009	Breakaway Pedestal pole (10')	1	EA
8009	Breakaway Pedestal pole (5')	1	EA
8014	LED 16" countdown pedestrian signal head.	2	EA
8016	Mast arm pole and 38' (cut to 30') mast arm any "T" dimension	1	EA
8022	Remove and dispose of existing material and equipment per assignment.	1	EA
8025	Twin mast arm pole and 50' (cut' to 38 / 50' (cut to 38') 'mast arms any "T" dimension.	1	EA
8027	1" detector sleeve galvanized or flexible liquid tight.	25	L.F.
8035	Schedule 80 rigid PVC conduit up tp 4" - trenched.	855	L.F.
8036	Schedule 80 rigid PVC conduit up tp 4" - bored.	175	L.F.
8037	Wood sign supports up to 4"x6".	243	L.F.
8038	Detectable warning surfaces	54	S.F.
8039	Install overhead or ground mounted sign (including hardware).	88	S.F.
8041	No. 6 AWG stranded bare copper ground wire.	380	L.F.
8043	Metered service pedestal embedded.	1	EA
8045	Electrical cable 1-conductor No. 4 AWG THHN/THWN.	50	L.F.
8047	Furnish and install electrical handhole.	9	EA
8052	Cut, clean, galvanize and cap traffic signal structure.	2	EA
8053	Electrical cable - 2 conductor (aluminium shielded)	1015	L.F.
8054	Electrical cable - 2 conductor (No. 14 AWG).	170	L.F.
8056	Electrical cable - 5 conductor (No. 14 AWG).	265	L.F.
8057	Electrical cable - 7 conductor (No. 14 AWG).	1040	L.F.
8058	Electrical cable - 2 conductor (No. 12 AWG) tray cable.	310	L.F.
8059	Loop wire encased in flexible tubing (No. 14 AWG).	1345	L.F.
8060	Saw cut for signal (loop detector).	360	L.F.
8065	Install controller and cabinet base mount.	1	EA

C. EQUIPMENT TO BE REMOVED

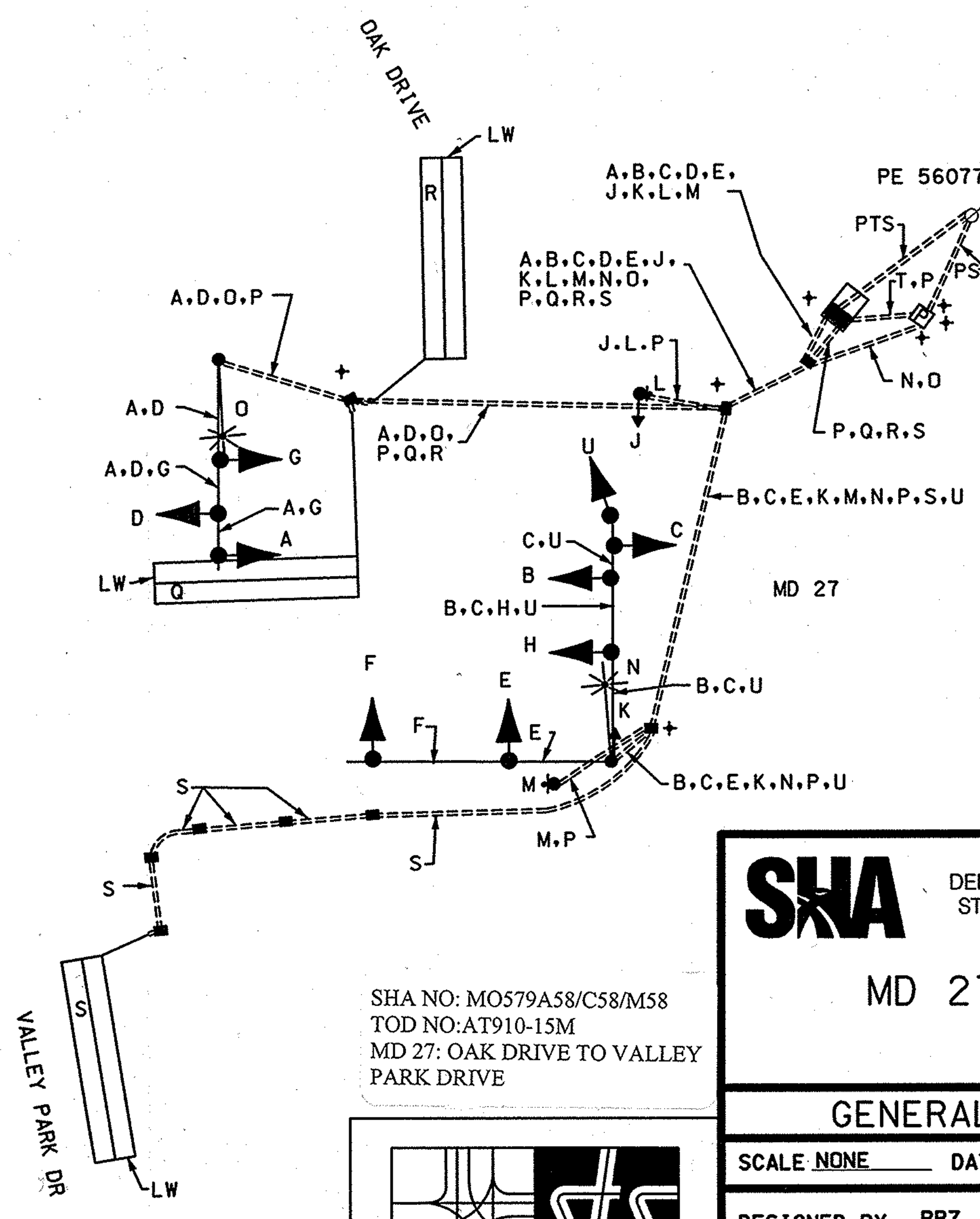
There is no signal equipment to be removed for this project.

PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11
PHASE 1 & 6	◄G-/G	◄G-/G	G	R	R	R	R	R	R	DW	DW
1 & 6 CHANGE	◄Y-/G	◄Y-/G	G	R	R	R	R	R	R	DW	DW
PHASE 2 & 6	G	G	G	G	G	G	R	R	R	DW	DW
2 & 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	DW	DW
PHASE 4	R	R	R	R	R	R	G	G	G	DW	DW
4 CHANGE	R	R	R	R	R	R	Y	Y	Y	DW	DW
PHASE 4 ALT	R	R	R	R	R	R	G	G	G	WK	WK
PED CLEAR / COUNTDOWN	R	R	R	R	R	R	G	G	G	FL/DW	FL/DW
4 ALT CHANGE	R	R	R	R	R	R	Y	Y	Y	DW	DW
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	DARK	DARK

NOTE: WHEN QUEUING LOOP ON VALLEY PARK DRIVE IS ACTIVATED THE SIGNAL OPERATION SHALL GO TO PHASE 4.

WIRING DIAGRAM



WIRING KEY

- A, B, C, D, E, U } 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)
- F, G, H, J, K } 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)
- L, M } 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G)
- N, O } 2-CONDUCTOR TRAY CABLE (NO. 12 A.W.G)
- P - STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
- Q, R, S } 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G) ALUMINUM SHIELDED
- T - 2-1 CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)
- LW - LOOP WIRE (NO. 14 A.W.G.)
- PS - PROPOSED UNDERGROUND SERVICE TO BE INSTALLED BY ALLEGHANY POWER
- PTS - PROPOSED UNDERGROUND TELEPHONE SERVICE FOR PHONE DROP
- + - GROUND ROD

SHA NO: MO579A58/C58/M58
TOD NO:AT910-15M
MD 27: OAK DRIVE TO VALLEY PARK DRIVE

STREET TRAFFIC STUDIES, LTD.
400 Crain Hwy.,N.W.
Glen Burnie,MD 21061
Ph (410) 590-5500
Fax (410) 590-6637

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STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MD 27 (RIDGE RD) AND OAK DRIVE

DAMASCUS, MARYLAND

GENERAL INFORMATION SHEET

SCALE NONE DATE 4/3/07 CONTRACT NO. AT9105185

DESIGNED BY RRZ COUNTY MONTGOMERY
DRAWN BY RC LOGMILE 15002704.66
CHECKED BY [signature] TIMS NO. H934
F.A.P. NO. TOD NO.

TS NO. 4563 DRAWING NO. 3 OF 4 SHEET NO. OF

PLOTTED: $DATETIME$
FILE: $FILE$

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